Human Cryopreservation Procedures

By Aschwin de Wolf and Charles Platt
Acknowledgments

The authors and Alcor Life Extension Foundation wish to thank Saul Kent and Bill Faloon of the Life Extension Foundation, the Miller family of Canada, and Edward and Vivian Thorp as donors of the Miller/LEF/Thorpe Readiness Grant to Alcor in 2008, which made this work possible.

For assistance in compiling and verifying information, we are especially grateful to Hugh Hixon, Steve Graber, and Mike Perry at Alcor. We received additional help from Steve Harris at Critical Care Research, and Steve Bridge, formerly of Alcor. Their willingness to donate time to this project was much appreciated.
How This Book Was Written

Aschwin de Wolf wrote the first drafts of sections 2, 3, 5, 7, 8, 10, 13, 14, 15, 16, and 18. Charles Platt wrote the first drafts of sections 4, 6, 9, 11, 12, 17, 19, and 20. Each section was then reviewed and edited by the other collaborator. Additional information was provided by Steve Bridge. Finally, working on behalf of Alcor Life Extension Foundation, Brian Wowk fact-checked and edited all of the chapters. He should not be held responsible, however, for any errors that remain. They are our responsibility.

Information was gathered during several visits to Alcor Foundation where staff were very generous with their time. We appreciate their help.

Most of the original photographs were taken by Charles Platt, who also drew the diagrams.
Contents

1. Introduction

2. Theoretical Rationale for Cryonics Procedures

3. Protocol

4. Legal and Ethical Considerations

5. Autopsy

6. Deployment Issues

7. Patient Assessment

8. Health Issues and Communicable Diseases

9. Cardiopulmonary Support: Circulation

10. Cardiopulmonary Support: Ventilation

11. Induction of Hypothermia

12. Liquid Ventilation

13. Medications
14. Monitoring

15. Sample Collection and Analysis

16. Remote Blood Washout

17. Patient Transport

18. Cryoprotection

19. Cooldown to Cryogenic Temperature

20. Long-Term Patient Care and Maintenance

Afterword by Charles Platt

Afterword by Aschwin de Wolf

Appendix 1: Quality of Patient Care in Cryonics

Appendix 2: Writing Case Reports
1. Introduction

In this book we have tried to compile existing information describing standby, stabilization, transport, and vitrification procedures in the field of human cryopreservation, often referred to as cryonics.

This is a small field in which essential skills and knowledge reside in only a handful of people. Much of this information has not been recorded over the years, or has accumulated piecemeal in a variety of scattered sources. Many of these sources are now out of date.

Institutional amnesia has already caused some incremental losses. By making an accurate record of everything that we know now, we hope to safeguard the ability to perform cryonics procedures in the future.

In addition, we believe that for cryonics to gain credibility, eventually some uniform standards must be established. The first step in this direction is a summary of the current state of the art.

We have written this as a reference work rather than as a teaching manual. While we include some photographs and diagrams, and we describe how equipment should be deployed and used, we have not included quick-reference summaries or self-tests. We believe that the people who instruct students usually want to develop their own educational materials of this kind. Our task is to provide a reliable source from which teaching aids can be derived.

Since this work has been written for Alcor, it focuses primarily on procedures and equipment that are specific to Alcor. However, we have summarized approaches at Cryonics Institute and at Suspended Animation where we are able to do so.

The authors have collaborated productively on cryonics-related texts in the past. Generally, de Wolf has more theoretical knowledge and a stronger academic background, and has become professionally involved in relevant research. Platt offers practical experience derived from participating in 21 cryonics cases for Alcor, CryoCare, and Suspended Animation.
Inevitably, we have omitted some details. To take just one example, the knowledge of cryobiology necessary to achieve organ vitrification is far outside the scope of this book. Our goal is to provide a general, practical overview of the procedures currently being used in cryonics.

Individual chapters may be found online, where we hope that they will be updated from time to time. Eventually a print-on-demand version of the book will be available with procedures as they exist in 2019.

Aschwin de Wolf
Charles Platt